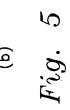
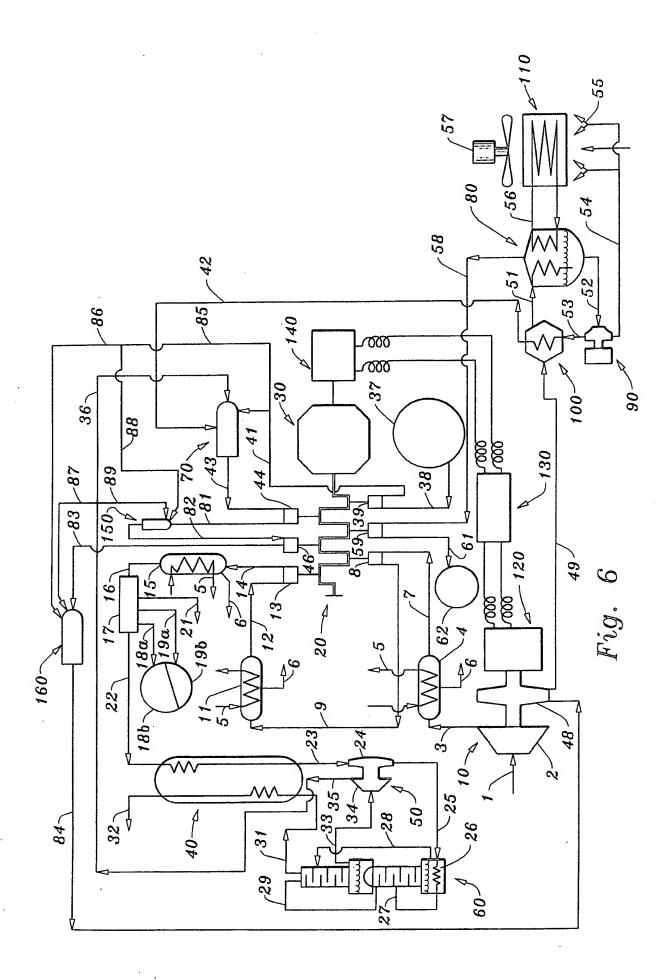
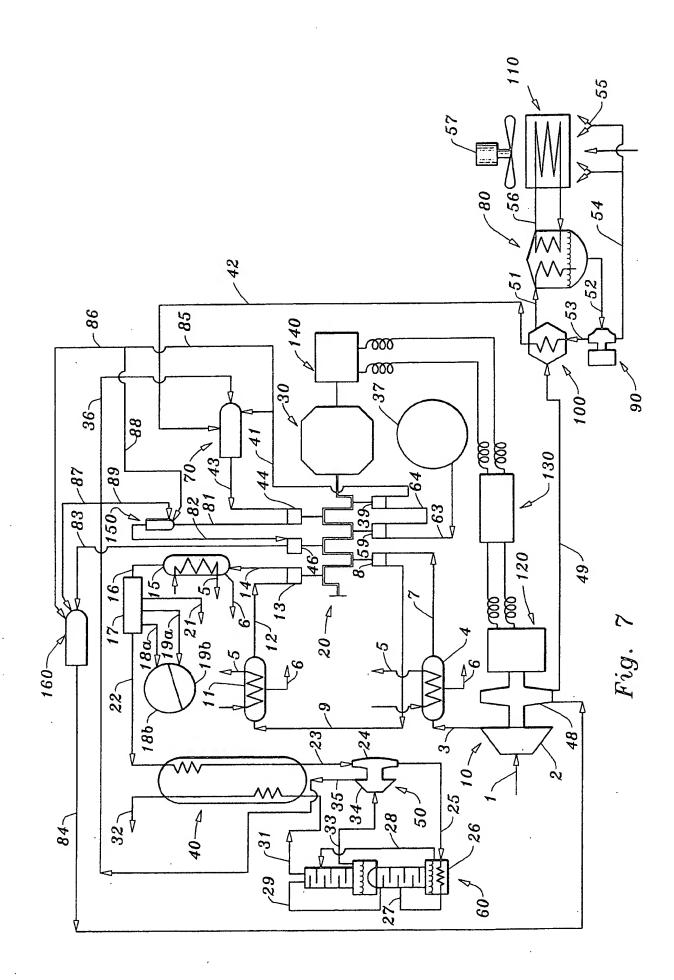
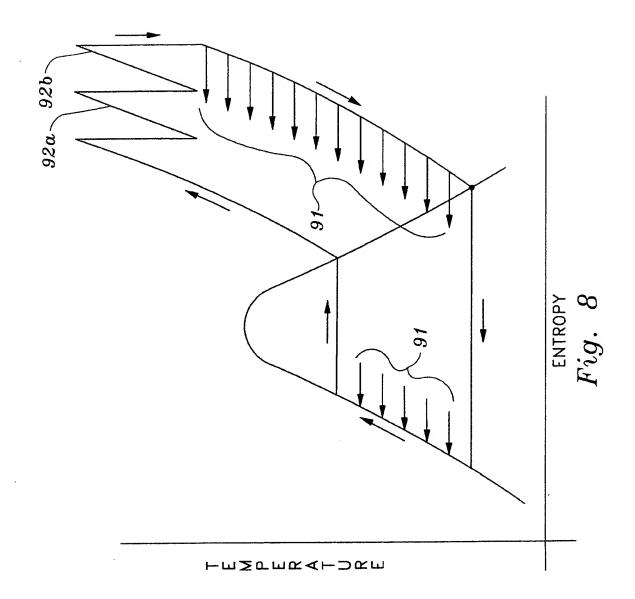


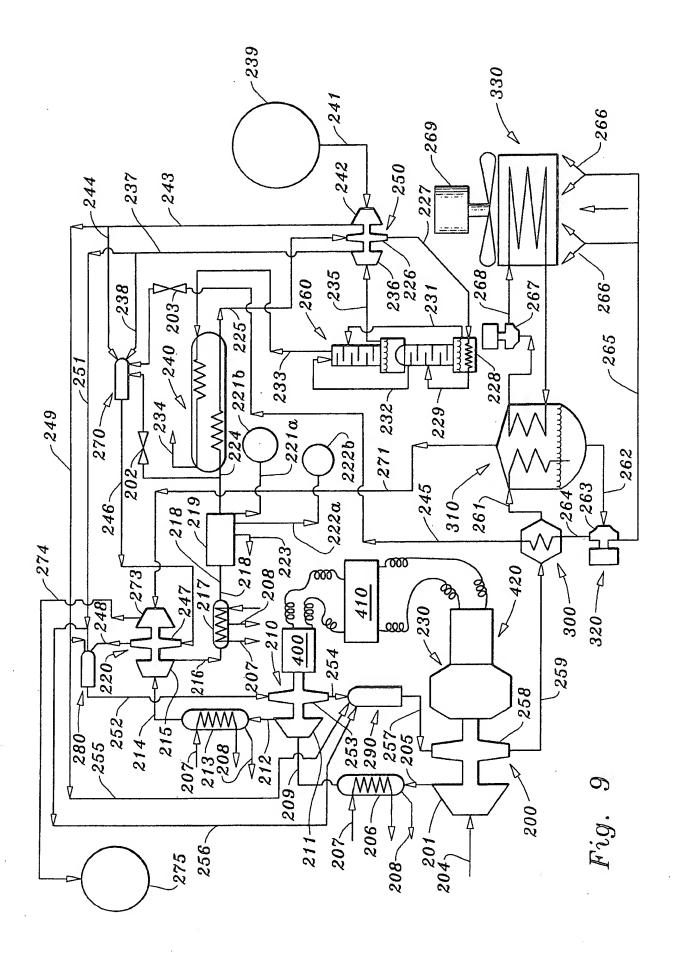
ENTROPY (b)

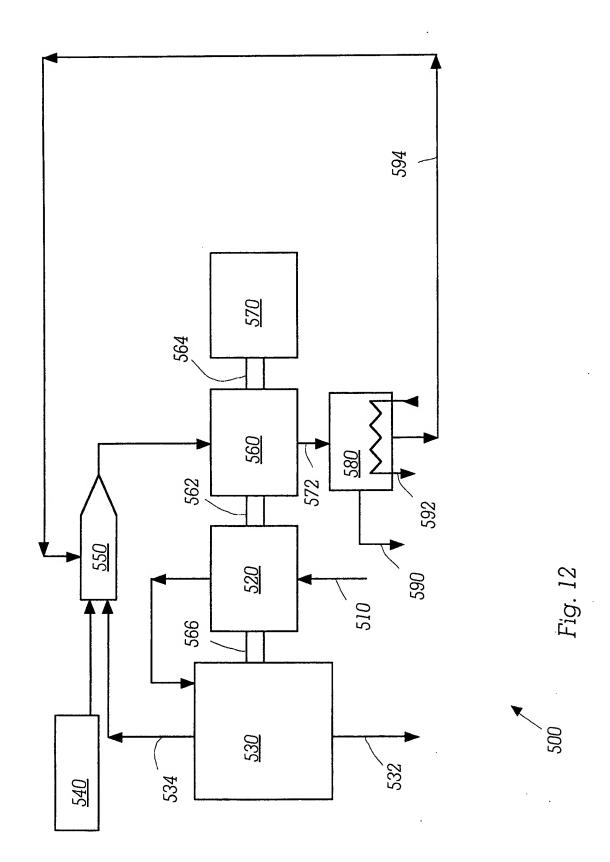


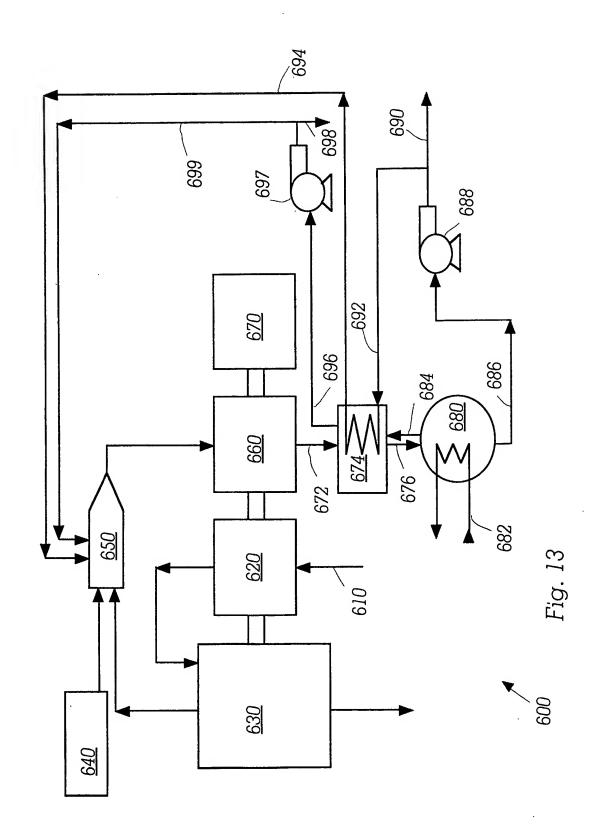












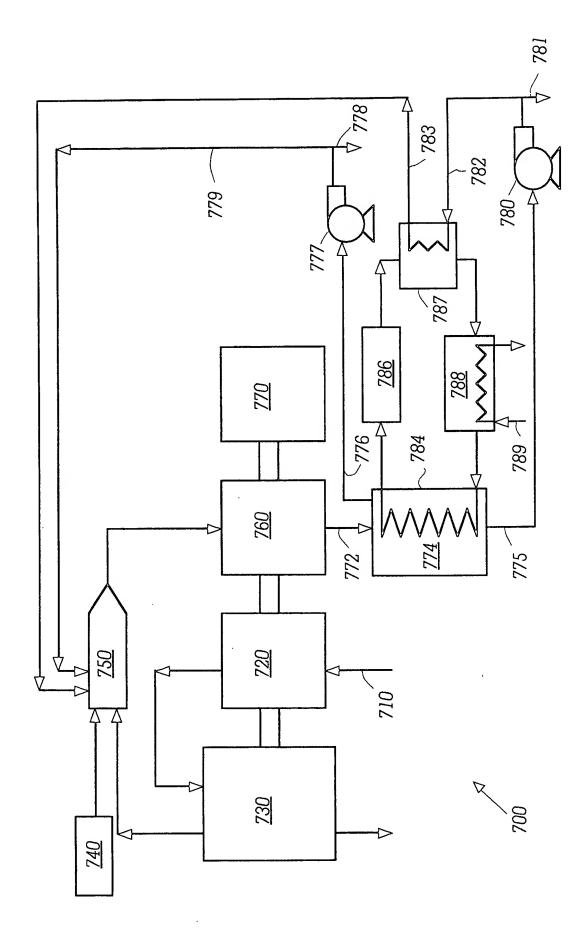


Fig. 14

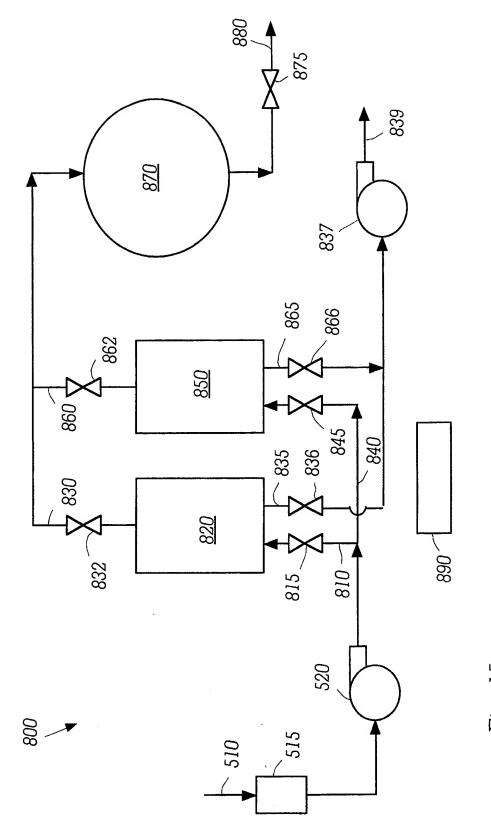
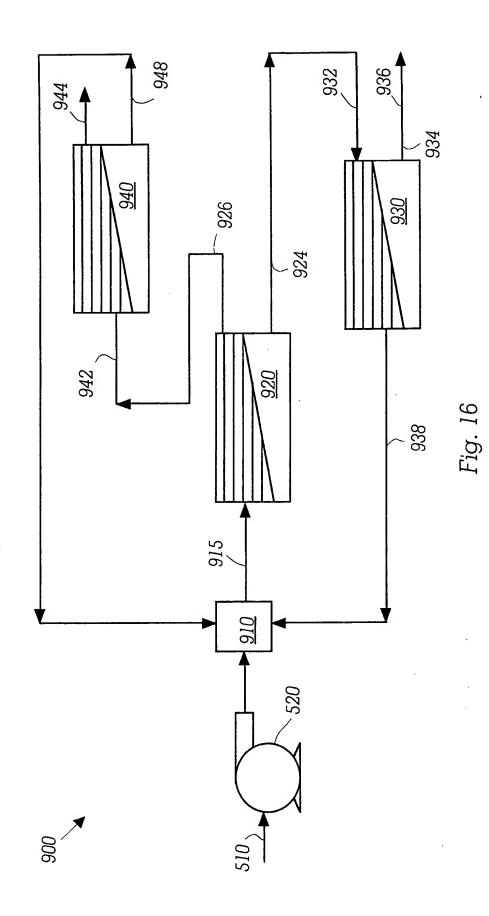


Fig. 15



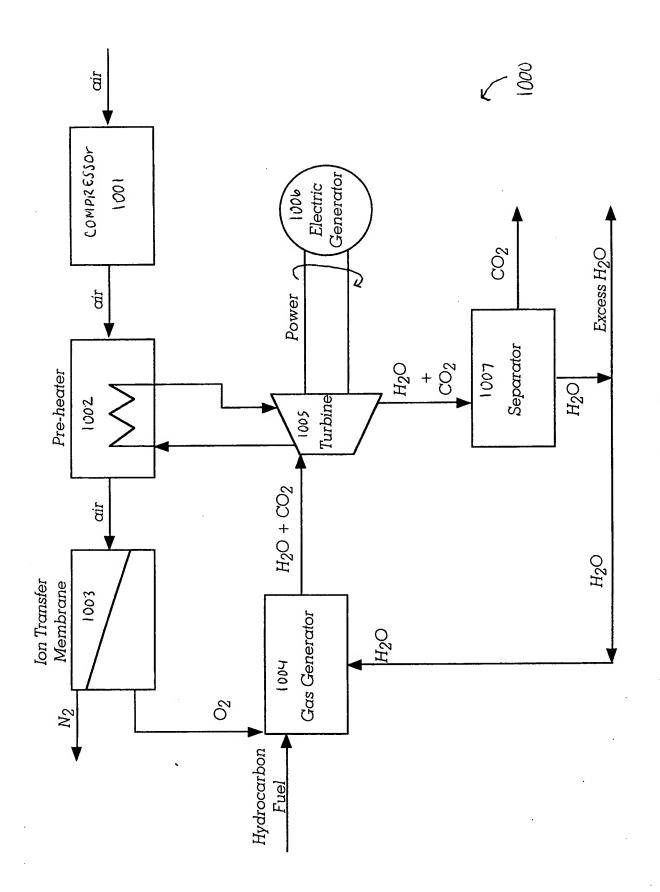
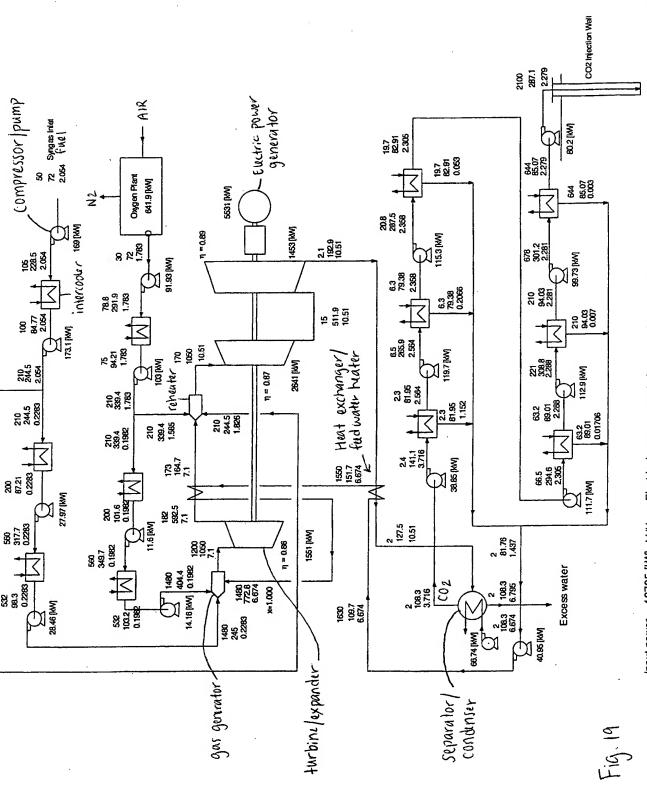


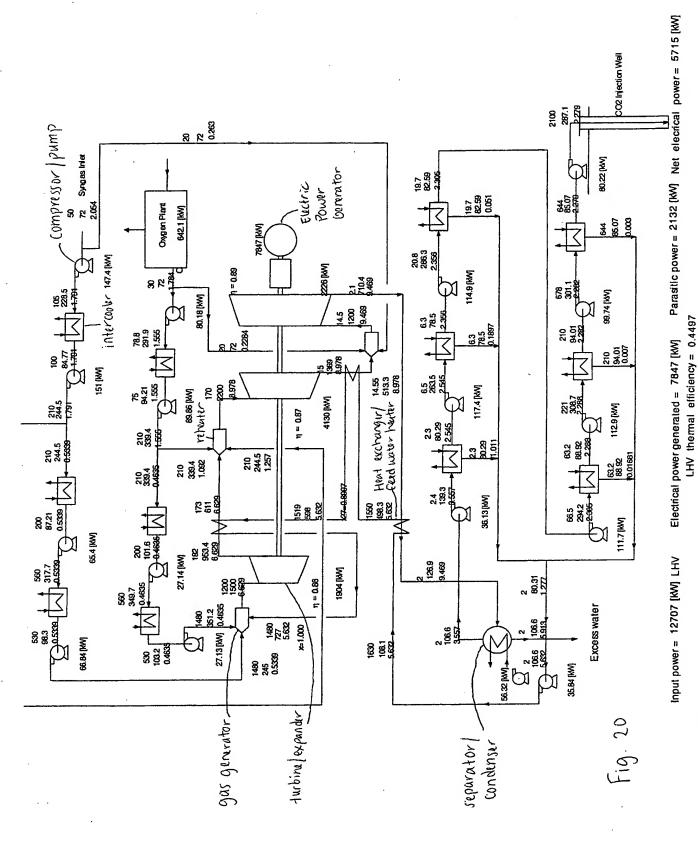
Fig. 17

0011 *** Low pressure oxygen Is liquified, pumped to high pressure and reheated to ambient temperature COMPRESSOR H20 OXYGEN *** CONDITIONING SYSTEM ION TRANSFER MEMBRANE OXYGEN SEPARATION PLANT రో COMPRESSOR INTEGATED CES POWER PLANT WITH 0 CO2 RECOVERY SYSTEM Fig. 18 1100 H_2O 1400 õ ő COMPRESSOR GENERATOR COMPRESSOR 1200 ž STEAM FEEDWATER PREHEATER 0061 1 CONDENSATE PUMP S H_2O CONDENSER ION TRANSPER MEMBRANE PLANT LOW PRESSURE TURBINE 2.0 psia 1300 1 δ 1500 200 STEAM 1000°F 100 psla 2000 € INTERMED PRESSURE TURBINE FEEDWATER SUPERHEATER H20 FEEDWATER PUMP REHEATER MIXER BLADE COOLANT to 3200°F 1200 CH, 00, H2, etc. EXCESS ← H₂O HIGH PRESSURE TURBINE ర 5 500 psta 1500 to GAS GENERATOR BLADE COOLANT LONG-TERM DESIGN to 3200°F CONDENSER COOLING WATER 1200 1500 0101 ČH4,CO, H2,etc °



LHV themal efficiency = 0.2721 Power Plant Operating on Syngas and with One Reheater.

Upper Number - Pressure in lb/in2, Middle Number - Temperature in °F, Bottom Number - Flow Rate in lb/sec



Power Plant Operating on Syngas and with Two Reheaters.

Upper Number - Pressure in lb/in2, Middle Number - Temperature in °F, Bottom Number - Flow Rate in lb/sec

			4	Vet Basis	Compos	ition, Flow I	Wet Basis Composition, Flow Rates, and Heating Values ^[1]	ig Values ^[1]			
		Flow Rate		Concer	Concentration	Hea	Heat of Combustion (LHV)	LHV)	Heat	Heat of Combustion (HHV)	(HIHV)
Component	$m^3/hr^{[2]}$	kg·mol/hr	kg/hr	lov %	% wt	kJ/kg·n	kJ/hr	kJ/m³(NTP) kJ/kg·mol	kJ/kg·mol	kJ/hr	kJ/m³(NTP)
H_2	3463.6	141.567	285.38	57.338	7.657	-241,826	-34,234,736		-285,840	-40,465,625	
CO ₂	1067.4	43.628	1920.05	17.670	51.516	0	0		0	0	
00	995.2	40.677	1139.37	9.37 16.475	30.570	-282,989	-11,511,081	-	-282,989	-11,511,081	
H_2O	444.1	18.152	327.01	7.352	8.774	0	0		-44,014	-798,920	
CH,	51.7	2.113	33.90	0.856	0.910	-802,320	-1,695,405		-890,347	-1,881,418	
N_2	18.3	0.748	20.95	0.303	0.562	0	0		0	0	
C_2H_4	0.4	0.016	0.46	0.007	0.012	-1,322,960	-21,629		-1,410,987	-23,068	
Total	6040.7	246.901	3727.12	7.12 100.00	100.00		-47,462,852	-7,857.2		-54,680,113	-9051.9
							13184.1 kW			15188.9 kW	

_	-		_						_	_	
		HHV)	kJ/m³(NTP)							-9627.5	
		Heat of Combustion (HHV)	kJ/hr	-40,465,625	0	-11,511,081	-1,881,418	0	-23,068	-53881192.92	14967.0 kW
		Heat	kJ/kg·mol	-285,840	0	-282,989	-890,347	0	-1,410,987		
Dry Basis Composition, Flow Rates, and Heating Values ^[1]	g Values ^(*)	CHV)	kJ/m³(NTP)							-8480.7	
	lates, and Heatin	Heat of Combustion (LHV)	kJ/hr	-34,234,736	0	-11,511,081	-1,695,405	0	-21,629	-47462851.82	13184.1 kW
	tion, Flow B	Heat	kJ/kg·mol	-241,826	0	-282,989	-802,320	0	0.013 -1,322,960		
	Composi	ıtration	% wt	8.393	56.470	33.510	0.997	0.616	0.013	100.00	
,	ry Basis	Concentration	% vol	61.888	20.05 19.072	17.782	0.924	0.327	0.007	100.00 100.00	
6	2		kg/hr	285.38 61.888	1920.05	1139.37	33.90	20.95	0.46	3400.11	
		Flow Rate	kg·mol/hr	141.567	43.628	40.677	2.113	0.748	0.016	228.749	
			$\mathrm{m}^3/\mathrm{br}^{[2]}$	3463.6	1067.4	995.2	51.7	18.3	0.4	5596.6	
			Component	H_2	CO ₂	00	CH4	N_2	C_2H_4	Total	

[1] Heating values based upon assumption that all reactants and products enter and leave at 25 °C and 1 atmosphere [2] Normal temperature and pressure assumed to be 25 °C and 1 atmosphere

Fig. 21